



BTF BIOSCRUBBER ODOR CONTROL SYSTEM

The BTF bioscrubber is a bio-trickling scrubber system which utilizes sulfur-oxidizing bacteria to remove H_2S and organic odors from odorous air.

Bioscrubbers are characterized by their very low operating cost and ability to handle high H_2S concentrations, up to and exceeding 1,000 ppm. Systems are available in both single and two-stage options. Single-stage recirculated systems are especially well suited for treating raw sewage odors as found in pump stations, headworks, and primary sedimentation. Two-stage systems can handle entire plant odors.

Process Description

The BTF bioscrubber uses random packed polyurethane foam (PUF) cubes as the primary support media for biomass growth. The media bed is irrigated with water and nutrients either continuously or intermittently. Makeup water is added to maintain the pH in a safe range, typically between 1 pH and 2 pH. This provides an optimum environment for the preferential growth of acidophilic, sulfur-oxidizing bacteria.

Evoqua's proven PUF media has a very high H_2S elimination capacity, conservatively in excess of $100 \text{ g/m}^3/\text{hr}$. Better than 99% H_2S removal can be achieved at an empty bed residence time (EBRT) of 8 to 10 seconds. Better than 90% odor removal is usually achieved with a EBRT between 15 and 20 seconds.

Standard Features

- FRP construction (corrosion resistant).
- Evoqua's high capacity PUF media.
- Variable speed fan option.
- Programmable logic controller option.
- Factory assembled NUCIRC skid option.
- Two-stage option.

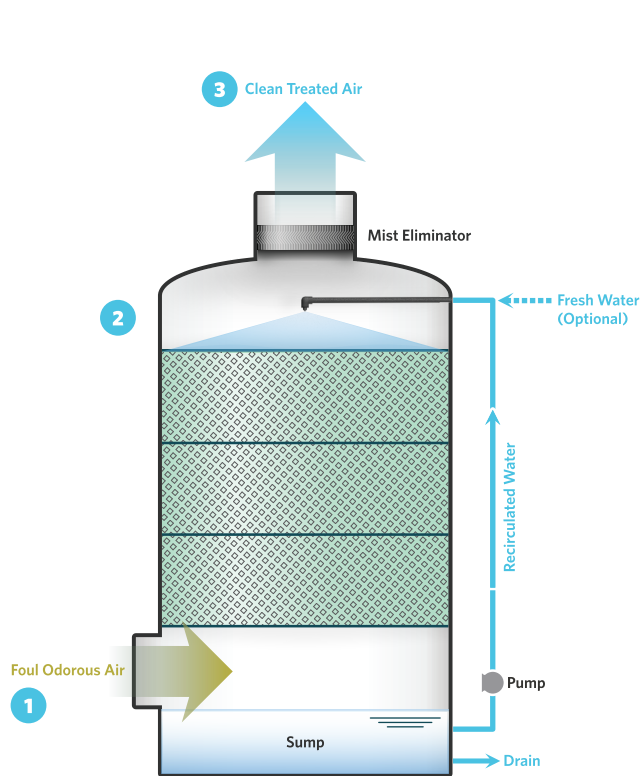
Design Parameters

Each BTF is custom sized to optimize its performance for an application. Sizing is based on air flow rate, H_2S and organic odor concentrations, and percent removal required. BTF systems can be designed to treat from 1,000 cfm to greater than 15,000 cfm of air per vessel with vessel diameters ranging from 6 ft to 14 ft. Please contact a product expert for higher air flow options.

All BTF systems are fabricated from premium vinyl ester FRP with resin rich interior corrosion liner and exterior UV resistant gel coat. A factory-assembled NUCIRC skid is available for improved reliability and ease of installation.

Single-Stage Designs

The BTF may be configured as either a single or dual stage bioscrubber. In the single-stage BTF, the irrigation water is recirculated continuously over the entire media bed. This is the normal mode of operation for system acclimation, and the preferred mode for very high H₂S concentrations. After acclimation, the single-stage BTF may also be operated with intermittent fresh water irrigation.



Process Overview - Single-Stage

1. Odorous air enters the system.
2. Continuous recirculation of biological beds for H₂S removal. Nutrient and fresh water added intermittently.
3. Clean, treated air exits the system.

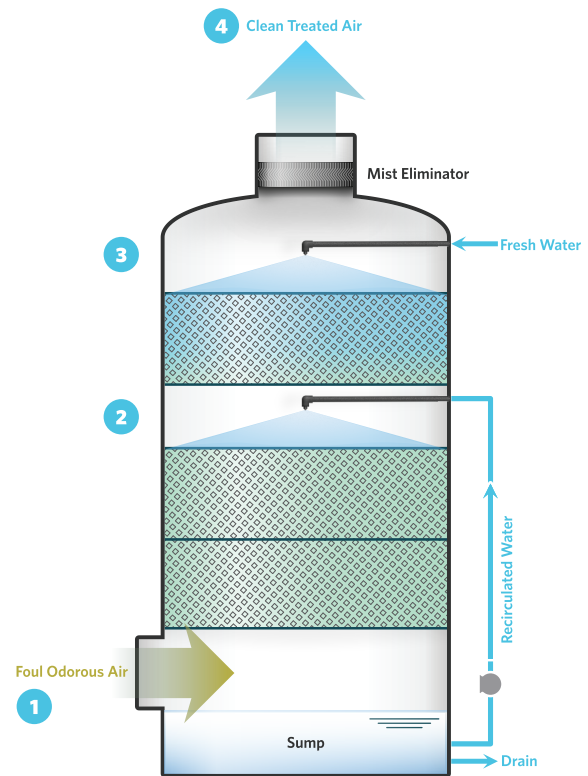
Two-Stage Designs

In Evoqua's patented* two-stage BTF, the first stage uses continuous recirculation and the second stage uses intermittent irrigation of fresh water. The dual stage process provides superior removal of organic compounds.

For More Information

Contact Evoqua's Air Quality and Odor Control Experts at **+1-858-487-2200** or email odorcontrol@evoqua.com.

* patented in some countries



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Process Overview - Two-Stage

1. Odorous air enters the system.
2. Continuous recirculation of lower beds for H₂S removal.
3. Intermittent spray of upper stage with fresh water and nutrient for VOC and RSC removal.
4. Clean, treated air exits the system.



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